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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/705,312 | 11/10/2003 | Ricky Dion Barnes | 5198-001 | 4460 |
| 24112 | 7590 | 07/07/2009 | | |
| COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518 | | | EXAMINER | |
| | | | MUSSELMAN, TIMOTHY A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3715 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/705,312

Applicant(s)

BARNES ET AL.

Examiner

TIMOTHY MUSSELMAN

Art Unit

3715

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29, 31-35 and 38-41 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 29, 31-35, 38-41 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Claims

In response to the amendment filed 4/2/2009, claims 29, 31-35, and 38-41 are pending in this application.

Claims 1-28 and 36-37 have been cancelled herein, and claim 41 has been added.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35 and 38-41 are rejected under 35 U.S.C. 112, 1st paragraph, for failure to meet the enablement requirement. The concept of the laser beam representing a "heat critical vertical boundary", or the "accumulation of smoke and heat that occurs during a fire", does not appear to be supported in the specification as originally filed (this limitation appears in claims 29, 35, and 41). There is a brief section in the background (page 2, lines 14-20) that states that the safety zone is higher at the beginning of a fire and lowers through the fire, but this is not directly translated into the specification or the disclosure of the invention. Similarly, the step of "lowering the critical boundary during the training exercise to represent ..." is not supported by the specification (this limitation is also found in claims 29, 35, and 41). The structures to perform this action are disclosed, but the intended purpose, as is being specifically claimed, is not explicitly tied to the structure. All other claims are rejected for their incorporation of the above language through their dependencies on claims 29 or 35.

Claim Rejections - 35 USC § 103

The following is a quotation of the relevant portion of 35 U.S.C. 103 that forms the basis for the rejections made in this section of the office action;

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Claims 29 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd (US 4,934,937) in combination with Butler et al. (US 5,903,345).

Regarding claims 29 and 34 Judd discloses a laser boundary system that comprises a laser emitter stationed at a fixed location that sweeps a laser beam through a partial field of rotation. Judd further discloses wearable sensors that emit an alarm only when struck by the beam (**claim 34**). See figs. 1 and 3. Judd further discloses wherein the swept beam(s) establish a height limit. See fig. 1, and note that the beams establish a height limit to combatant trainees positioned below the beam, who will be struck if they rise up into the beam. Additionally, Judd discloses wherein the laser height is adjustable along a vertical axis. See col. 3: 15-20.

Judd does not teach wherein the boundary is swept continuously through 360 degrees, nor where the system is configured to lower the boundary remotely. However, in the art of combat simulators utilizing laser boundary systems, such as Judd, one of ordinary skill would have been motivated to consider other similar laser emitting devices as alternatives, as this would be replacing one type of emitter with a known equivalent (see MPEP 2143 B). One such device is the emitter of Butler, which rotates a beam about a 360 degree axis and includes a remote adjuster to control the height of the beam. See col. 1: 20-47. One

of ordinary skill would have been inclined to consider this emitter in order to extend the range of the beam, and increase the effective radial range of the simulation system. Since this would not be generating a new simulation system or concept, but merely adjusting and extending the range of the existing system, this range determination would be an arbitrary design choice well within the abilities of one of ordinary skill in the art.

Applicant's limitations in claim 29 regarding the boundaries representation of 'smoke and heat' are directed to the function of the apparatus, and will not patentably distinguish over the prior art. See MPEP 2114 regarding functional limitations in apparatus claims.

Regarding claims 31-33, Judd discloses wherein the beam apparatus is adjustable along the vertical axis, see col. 3: 15-20. Judd fails to teach wherein the beam angle is adjustable relative to the ground (including the angle specifics of claims 37 and 38) and also wherein these adjustments can be accomplished via remote control. However, Butler teaches of these features in col. 7: 42-63 and col. 1: 20-47. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the positioning and remote control laser scanner features of Butler as the emitters in the system of Judd, in order to improve the product by increasing the control of the laser emitting device in a manner known in the art as taught by Butler.

Response to Arguments

Applicants arguments dated 4/2/2009 have been fully considered. Applicant argues that Butler does not disclose moving a beam downward while the laser is operating. Examiner disagrees. Col. 1: 20-47 discloses wherein the laser can be adjusted for height, and col. 4: 35-40 discloses wherein the laser scanning system need not be stopped while adjustments are made. Applicant's arguments regarding claim 35 are moot in view of the new grounds of rejection stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY MUSSELMAN whose telephone number is (571)272-1814. The examiner can normally be reached on Mon-Thu 6:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571)272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. M./
Examiner of Art Unit 3715

/XUAN M. THAI/
Supervisory Patent Examiner, Art Unit 3715